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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,998	06/25/2003	Ian M. Bennett	PHO 99002CIP	4756

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EXAMINER	
LERNER, MARTIN	
ART UNIT	**PAPER NUMBER**
2626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/27/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/603,998	BENNETT, IAN M.	
	Examiner	Art Unit	
	Martin Lerner	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 to 28* is/are pending in the application.

4a) Of the above claim(s) *1 to 25* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26 to 28* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group III, Claims 26 to 28, in the reply filed on 12 April 2007 is acknowledged.

2. Claims 1 to 25 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12 April 2007.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 26 to 28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Applicant's Specification fails to provide enablement as to the steps of formulating a random set of questions and performing semantic decoding on said random set of questions to identify a disambiguated set of questions. Firstly, it is

unclear what exactly is a "random" set of questions, or what makes a set of questions "random". Applicant's Specification does not enable one skilled in the art to determine what constitutes a "random" set of questions, and how to make a set of questions that are "random". Secondly, Applicant's Specification does not enable one of ordinary skill in the art as to a method to produce a "disambiguated" set of questions from the "random" set of questions. It is known in the prior art to disambiguate results from speech recognition, but Applicant's Specification does not set forth even one method of disambiguating questions. Moreover, disambiguation of a set of questions may involve procedures considerably different from disambiguation of results from speech recognition. A keyword search was performed on Applicant's Patent Publication US 2004/0030556, corresponding to the current application, but the only occurrence of the terms "random" and "disambiguated" is found at ¶[0389] - ¶[0395], corresponding to Page 64 of the Specification, Steps 4 to 6, and Figure 20: Steps 2040 to 2060. Thus, Applicant's Specification provides literal support for the limitations of the claims, but one skilled in the art is not informed of how to perform, or what is involved in the performance of, the claimed method steps.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 27 and 28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 27 and 28 should depend upon independent claim 26, not upon claim 25. Claim 27 would lack antecedent basis for steps (a) to (f) if it depended upon claim 25, as independent claim 18 only sets forth steps (a) to (e). However, independent claim 26 has steps (a) to (f). Furthermore, claim 28 would fail to further limit claim 25, as both claims set forth the same subject matter of a natural language engine operating on an online server connected to the Internet. Thus, claim 28 should also depend on independent claim 26. Claims 27 and 28 are treated as depending upon independent claim 26 for purposes of the rejection.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 26 to 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Simske et al.* in view of *Wolf et al. ('001)*.

(Note: Applicant's effective filing date for the claimed subject matter is 25 June 2003. The current application is a continuation-in-part of four applications filed on 12 November 1999. However, Specifications of the four parent applications were reviewed, but do not disclose the subject matter now claimed. Applicant's Specification discloses the claimed embodiment on Page 64, and Figure 20: Steps 2040 to 2060. However, the disclosure of the claimed embodiment is not found in any of the parent

applications. Thus, Applicant's effective filing date for the claimed subject matter is the filing date of the current application, 25 June 2003, and not the filing date of any of the parent applications.)

Concerning independent claim 25, *Simske et al.* discloses a method of managing synonymic searching, comprising:

"receiving a user question" – a synonymic search application may construct a search query that includes a user-input search query ¶[0067]; a user-input search query implies that a user inputs a search query and the user-input search query is received by the synonymic search application;

"dividing the user question into a plurality of words corresponding to the user question" – in certain embodiments, the synonymic search application may analyze the user-input query to determine the corresponding part of speech for each term of such query to select the appropriate synonyms for the terms ¶[0072] - ¶[0073]; analyzing the part of speech of each of the terms of a user-input query involves "dividing the question into a plurality of words corresponding to the user question";

"determining synonyms for each word in said plurality of words" – if a user inputs a search for "Class List Stanford", a synonymic search application may determine one or more synonyms for one or more words used in the user's query; the synonymic search application may determine that "division" is a synonym of "class" ¶[0067]; additionally, six synonymic search queries are identified as "class list for Stanford", "set

list for Stanford", "class catalog for Stanford", "class inventory for Stanford", "set catalog for Stanford", and "set inventory for Stanford" ¶[0089] - ¶[0095];

"formulating a random set of questions based on said synonyms" – a list of synonymic queries ("a random set of questions based on said synonyms") for the user-input query is generated; that is, synonyms for one or more of the terms of the user-input query are determined by the synonymic search application ¶[0071]; a synonymic search query is constructed that includes one or more other queries in which one or more of the terms of the user-input query are replaced with a synonym, and the constructed synonymic search query system may effectively be performed such that each query is logically ORed (i.e. to determine if documents are found that satisfy any one of the queries) ¶[0067]; the list of questions is "random", to the extent enablement is provided for "random", insofar as the list, or "set", of synonymic queries is an initial list not limited by disambiguation;

"performing semantic decoding on said random set of questions, to identify a disambiguated set of questions" – a variety of techniques are provided for limiting the initial set of the list of all synonymic queries by "semantic decoding"; preferably, the synonymic search set generated by the synonymic search application for a given user-input search query is limited to proximate synonyms in order to keep the number of search queries manageable; "proximate" synonyms refer to those synonyms that are interchangeable with a given word without altering its meaning, whereas associated synonyms include related words that have similar (although not the same) meaning as a given word; moreover, phrases (idioms) are preferably identified and treated as single

candidates, so that "launch" results as a synonym for "take off", and "elevate" or "erect" result as synonyms for "put up"; optimal synonymic queries are selected by limiting their number ¶[0074] - ¶[0078]; limiting an initial list of all synonymic queries by only proximate synonyms or by phrases (idioms) involves "semantic" considerations, and results in a "disambiguated" set of questions as compared to an initial set of questions because an optimal number is selected instead of using all the synonymic queries;

"wherein said set of disambiguated questions correspond to semantic variants of questions that can be posed to a natural language engine" – a search engine enables a user to input a search query as a natural language query ¶[0059]; a search engine that enables a user to input a search query as a natural language query is equivalent to "a natural language engine"; optimal synonymic queries ("said set of disambiguated questions") are selected by considering only "proximate" synonyms or by identifying phrases and treating them as single candidates for synonyms ¶[0074] -¶ [0078]; whether or not synonyms are "proximate" or phrases are treated as single candidates involve considerations of whether they are "semantic variants".

Concerning independent claim 26, the only element not clearly disclosed by *Simske et al.* is "storing said set of disambiguated questions in a speech recognition lattice". *Simske et al.* must store synonymic queries at least temporarily, but is not directed to speech recognition, and does not store queries in a form of a lattice for speech recognition. However, lattices for words or phonemes are fairly well known in speech recognition. Specifically, *Wolf et al. ('001)* teaches a method for retrieving documents by spoken queries with a speech recognition engine, where a recognizer

represents a spoken query as a lattice, indicating possible sequential combinations of words in the spoken query. The lattice is converted to a query certainty vector, which is compared to each of low dimension document feature vectors, by a search engine, to retrieve a matching result set of documents. (Column 2, Lines 61 to 67) The advantage is that a lattice retains the certainty due to ambiguities in the spoken query, where certainty information includes statistical likelihood or probabilities. Thus, instead of converting the spoken query directly to text, which may contain spurious words, or words converted totally out of context that may result in an erroneous retrieval, performance is optimized when a query is specified by speech. (Column 1, Lines 40 to 66; Column 5, Lines 1 to 28) It would have been obvious to one having ordinary skill in the art to store optimal synonymic queries in a speech recognition lattice when queries are input by speech as taught by *Wolf et al. ('001)* in a method of management of synonymic searching of *Simske et al.* for a purpose of optimizing performance of a method for retrieving documents from a spoken query by eliminating spurious words and retaining certainty information.

Concerning claims 27 and 28, *Simske et al.* discloses implementation of the synonymic search application via computer-readable instructions ¶[0156]; access is via a local computer and/or via a client/server network through the Internet ¶[0029]; a search engine enables a user to input a search query as a natural language query ¶[0059].

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Wolf et al. ('492), Li et al., Roux et al., and Charlesworth et al. disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin Lerner whose telephone number is (571) 272-7608. The examiner can normally be reached on 8:30 AM to 6:00 PM Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ML
4/20/07

Martin Lerner
Examiner
Group Art Unit 2626